Small Business Innovation Research/Small Business Tech Transfer

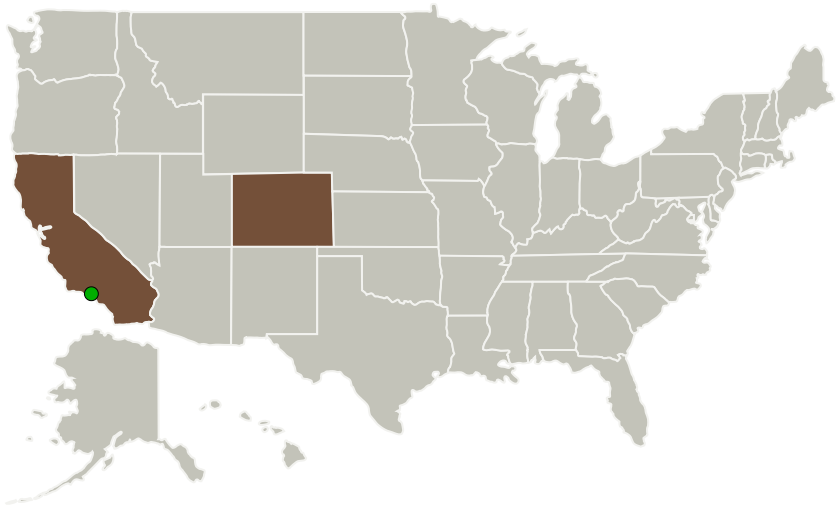
High Power Radiation Tolerant CubeSat Power System, Phase I

Completed Technology Project (2017 - 2017)

Project Introduction

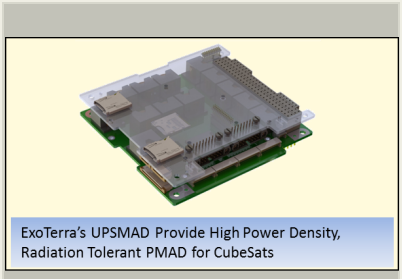
No vendor has yet to provide a radiation tolerant, high efficiency, small Power Management and Distribution module for the SmallSat and CubeSat market yet. Let alone one with built in batteries. That is where ExoTerra's mission ready Universal Power Storage, Management, And Distribution comes in. Offering nine different voltage rails, each with multiple switched outputs, and an attached thermally moderated 40Whr Lithium Ion battery pack, all packaged in a CubeSat standard PC104 electronics form factor. Its highly modular nature and inherent radiation tolerance will allow it to be used in a multitude of missions right off of the shelf.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
ExoTerra Resource, LLC	Lead Organization	Industry	Littleton, Colorado
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations	
California	Colorado



High Power Radiation Tolerant CubeSat Power System, Phase I Briefing Chart Image

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Project Transitions

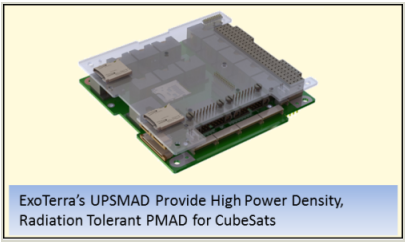
June 2017: Project Start

December 2017: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140826)*

Images



Briefing Chart Image
High Power Radiation Tolerant CubeSat Power System, Phase I Briefing Chart Image *(https://techport.nasa.gov/image/135534)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
ExoTerra Resource, LLC

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

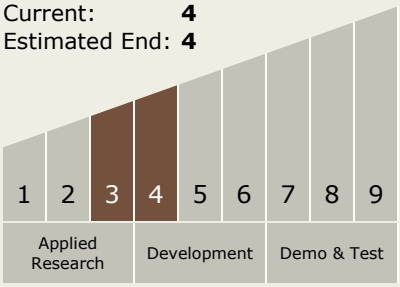
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Chris Thein

Technology Maturity (TRL)

Start: **3**
Current: **4**
Estimated End: **4**



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Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.3 Power Management and Distribution
    - TX03.3.1 Management and Control

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System